

ENVIRONMENTAL ASSESSMENT

Emergency Deviation from Test 7 of the Experimental Program of Water Deliveries to Everglades National Park to Protect the Cape Sable Seaside Sparrow

1.00 BACKGROUND PURPOSE AND OBJECTIVES

1.01 Endangered Species Act Consultation. In 1995, the Jacksonville District of the U.S. Army Corps of Engineers (Corps) consulted with the U.S. Fish and Wildlife Service (FWS) under provisions of the Endangered Species Act (Act) for the subject Test 7 project. By letter of October 27, 1995, the FWS provided a Biological Opinion (BO) that Test 7 would likely result in jeopardizing the continued existence of the Cape Sable seaside sparrow, a species listed as endangered under the Act. In particular, the sparrow subpopulation west of Shark River Slough (western subpopulation) has suffered a 90% decline in numbers over the past six years - from about 2700 birds in 1992 to about 270 in 1997. A record of this consultation was included in the October 1995 Environmental Assessment that was prepared for Test 7 under provisions of the National Environmental Policy Act (NEPA). Since completion of the 1995 BO, the FWS has identified significant new information that was not available previously and that reveals effects on the sparrow that were not considered in the BO. The FWS believes that the new information calls for immediate action to reduce adverse effects on both the sparrow and its habitat. To address this, the FWS and the Corps agreed to reinitiate consultation, under provisions of the Act, on the Experimental Program and the Modified Water Deliveries projects. This reconsultation is under development.

1.02 Remedial Action Plan. In the Test 7 BO, the FWS recommended a Reasonable and Prudent Alternative (RPA) to avoid "jeopardy" to the sparrow, consisting of several elements. One of these was the development of a Remedial Action Plan (RAP) that would identify actions and management interventions that could be taken if the status of the sparrow population declined during Test 7. At the Corps' request, the FWS agreed to take the lead in developing and coordinating the RAP. In September 1997, the FWS sent the Corps a revised Final Draft RAP that listed Category I actions that should be undertaken immediately to attempt to prevent the decline of the species. It also defined conditions that would trigger Category II actions that should be taken if the species were found to be declining. One of the triggers was a determination that water conditions in the sparrow's western habitat were not suitable for breeding, i.e., standing water between March 1st and June 15th each year. The Category II actions developed by the FWS to address the western habitat

problem were to move water away from the habitat by breaching the L-67 Extension levee and to implement changes in appropriate operational schedules that were to be developed as Category I actions. By letter of November 18, 1997 (see Appendix A), the FWS addressed the Corps' concern about lack of authority to flood private lands by breaching or removing L-67 Extension. The FWS stated that they were "obliged to defer to [the Corps'] interpretation of [its] authorities". Therefore, the FWS was "no longer asking [the Corps] to immediately implement the actions in the RAP (such as removing the L-67 Extension) that would result in flooding private lands. However, [the FWS] believe these actions will be critical in the next two to three years." By letter of December 9th, the Corps modified the text of the RAP, accordingly, and sent it back to the FWS for approval prior to the Corps adopting it.

1.03 Current Status of the Sparrow. The entire Cape Sable seaside sparrow population exists in six subpopulations. As recently as 1992, the western subpopulation represented one of two "core" subpopulations, containing 41% of the total sparrow population. It now contains only 7% of the total population, and no longer serves as a core subpopulation. The "Old Ingraham Highway" subpopulation, the only remaining core subpopulation, is healthy, but situated in an area that is vulnerable to catastrophic wildfires and limited in geographic extent. Four other smaller subpopulations near the greater Taylor Slough area of the Park make up the "eastern" subpopulation. The eastern subpopulation declined from over 1500 birds in 1981 (prior to the Experimental Program), to about half that number in 1997, and is now too small to serve as a core subpopulation. Because only one core subpopulation now remains, and it is subject to catastrophic events, the sparrow is at high risk of extinction. The FWS believes that the western subpopulation must be recovered to levels that would allow it to serve again as a core subpopulation so as to reduce this risk.

1.04 Determination of an Emergency. By letter of December 24, 1997 (see Appendix A), subsequent to meetings and conference calls on December 17th, 22nd and 23rd, the FWS and the Park indicated that the breeding situation in the sparrow's western habitat was critical, and called for "immediate, remedial, substantive, and temporary modifications to the Experimental Water Deliveries Program to Everglades National Park." They stated that "If the adult [sparrows] remaining in the western subpopulation do not breed successfully during the next breeding season [spring 1998], the subpopulation is likely to become extinct. The loss of this western subpopulation, in turn, would make the extinction of the entire species almost certain" within two decades.

1.05 The Immediate Problem. The problem was defined by the FWS as regulatory water releases out of Water Conservation Area (WCA) 3A called for by the Corps' water regulation schedule. These

releases are made through four large water management structures (from west to east: S-12A, B, C, and D), equally spaced along the southern levee of WCA 3A, and discharging directly into the Park.

These structures are an important means of providing needed water supply to the Park in concert with rainfall in the system, but they also are the only effective means to release water out of WCA 3A to attempt to regulate how high water rises in the impoundment. The existing water management system and its operation, in conjunction with extremely heavy rainfall enhanced by the strong El Nino event, have created flooding of the sparrow's western habitat, consisting of short-hydroperiod marl prairies. Park hydrologists have projected that sparrows would still have an opportunity to breed in this habitat this year if water levels recede at a rate similar to that which occurred during the 1996 breeding season of March through June. They state that any regulatory water releases through the S-12 structures this winter would prevent the habitat from drying sufficiently to allow the sparrows to breed. Releasing flows through the S-12s would also detrimentally affect the vegetative composition in the western habitat. Over the past four years, portions of the habitat have shifted from muhly grass dominated vegetation to sawgrass domination as a result of lengthened hydroperiod. The FWS believes that this has significantly diminished the value of the habitat for the sparrow. They state: "Further releases of water through the S-12 structures will contribute to this degradation of the sparrow's habitat and may foreclose the formulation or implementation of reasonable and prudent alternatives which would avoid jeopardizing the continued existence of the Cape Sable seaside sparrow."

1.06 FWS Recommendations. In response to the Park's hydrologic projection, the FWS has indicated that additional releases through the S-12s (particularly S-12A and S-12B, which discharge closest to the sparrow's habitat) would likely jeopardize the continued existence of the species, and, therefore, be in violation of the Endangered Species Act. The Park and the FWS are also opposed to water management actions (such as storing water in the WCA 3A in lieu of releasing it through the S-12s) that would inflict unacceptable harm to natural resources within the WCAs (see December 24, 1997, Appendix A). They recommend opening S-333 to discharge water out of WCA 3A and east into the Tamiami Canal, from which it would spread into Northeast Shark River Slough (NESRS) through existing culverts under U.S. Highway 41 (Tamiami Trail). They also have asked the Corps to implement the Category II RAP action to cut gaps in the L-67 Extension levee, or completely remove the levee and fill the borrow canal.

This levee constrains water from following natural ground contours and spreading southeastward into NESRS after being discharged through S-12C and S-12D. Removal or breaching of L-67 Extension would greatly reduce the impacts on the sparrow's western habitat from discharges out of these structures.

1.07 Emergency Conditions. The temporary modification of the

approved operations for Test 7 of the Experimental Program as called for by the FWS would normally require preparation of a NEPA document under Council of Environmental Quality (CEQ) regulations before action could be taken. Completion of an Environmental Assessment (EA) with a Finding of No Significant Impact (FONSI) would normally take several months. An Environmental Impact Statement (EIS) would normally take at least one year. In a January 9th conference call with CEQ arranged by the Corps, the FWS supported the position that the present situation constituted an emergency that should be handled in accordance with 40 CFR 1506.11 of the CEQ regulations implementing NEPA. These call for consultations to be held with CEQ about "alternative arrangements" that would allow an emergency action with significant environmental impact to be taken "without observing the provisions of these regulations".

1.08 Purpose. This EA has been prepared at the suggestion of CEQ that the Corps prepare a short document to the extent possible within two weeks that would document the significance, or lack of significance, of environmental impacts expected to result from actions proposed to address the emergency situation with the sparrow. If it is determined that the proposed actions would likely have a significant effect on the quality of the human environment, then a final consultation would be held with CEQ before any further action could be taken. On January 23rd, the Corps up-dated CEQ on the progress of the documentation and received approval on the process to date. The agencies explained that no good alternative was available, and that every alternative was likely to have a significant impact on property or natural resources.

1.09 Objectives. In their December 24th letter, the FWS and the Park have defined the duration of their requested temporary modifications to Test 7 as beginning immediately and ending by the end of the sparrow's breeding season, expected no later than July 1, 1998. This EA presents the actions considered by the Corps to provide emergency relief to the sparrow during this time period, after which the emergency is considered over. To the extent possible in the time available, expected environmental impacts of the considered actions have been identified. These have been developed from information provided by Federal and state resource agencies and from hydrologic simulations from the South Florida Water Management Model (SFWMM) where applicable. In most cases, impacts cannot be accurately quantified, but sufficient information is believed available to determine if the threshold of "significance" would be exceeded.

2.00 EMERGENCY ACTIONS CONSIDERED

2.01 General. Operationally, the primary objective is to prevent or minimize the discharge of water from WCA 3A through the S-12s that would increase the depth of surface water in the sparrow's western habitat, or slow its recession, during the period extending through the 1998 breeding season. Optimal breeding is dependent on having no standing water on at least 7400 acres (30 km²) of the habitat between March 1st and June 15th. It should be recognized that the existing water management system does not provide the operational flexibility to create suitable water conditions by offsetting the effects of local rainfall. The success or failure of these emergency actions would be dependent in large part on the amount and timing of rainfall during this season. Secondly, the objective is to avoid, to the extent practicable, exacerbating the adverse impacts of having had high water conditions in the WCAs since 1994. Some operational actions have already been taken that are considered within the Corps authority to implement without additional NEPA documentation. Continuation of these actions for the proposed duration or increasing the magnitude of the actions would normally require additional NEPA documentation. All water elevations (stage) in subsequent paragraphs are referenced to the National Geodetic Vertical Datum (NGVD).

2.02 Actions to Reduce Water Flow into ARM Loxahatchee National Wildlife Refuge (WCA 1). Inflows to WCA 1 primarily come through S-5A and S-6 pump stations, which remove water from the Everglades Agricultural Area (EAA). These discharges are being minimized by using the east coast canal system to move water to the estuaries to the maximum extent possible.

2.03 Actions to Reduce Water Flow into WCA 2A. Inflows to WCA 2A primarily come through Pump Station S-7 and the S-10 structures discharging water out of WCA 1. The S-10 structures were closed on December 23rd and 29th and will remain closed per the temporary deviation schedule. A temporary deviation in the WCA 1 water regulation schedule has been implemented to allow water levels to rise to 17.5 feet, and transition to the regulation schedule by May 15th (see Plate 1). The east coast canal system is being used to move water to the estuaries to the maximum extent possible.

2.04 Actions to Reduce Water Flow into WCA 3A. Inflows to WCA 3A come through the following structures, which are not discharging at this time: the S-11 structures, which discharge water out of WCA 2A, and S-8, S-9, S-140, S-150, S-190, and G-155. The S-11 structures were closed on December 29th and will remain closed as per the temporary deviation. A temporary deviation in the WCA 2A water regulation schedule has been implemented as shown in Plate 2. The east coast canal system is being used to move water to the estuaries to the maximum extent possible.

2.05 Actions to Divert Outflows Through Structures from WCA 3A away from Western Habitat. Structure S-151 was opened to design capacity on December 29th to move water out of WCA 3A and into WCA 3B. Structures S-12A and S-12B were closed on November 19th and 25th, respectively, and will remain closed for as long as possible. Structures 12C and S-12D are partially open, discharging at 350 cfs and 700 cfs, respectively, as of December 24th. Discharges will be made as described in the temporary deviation schedule for WCA 3A, Zone A1 (see Plate 3).

2.06 Action to Create a New Outlet from WCA 3A. Starting in July 1994, a Pilot Gap Test was conducted at the L-67 levees separating WCA 3A and WCA 3B. It consisted of cutting a 1000-foot gap in L-67A and L-67C to enable measurements of the hydraulics of water flowing through a gap. This information was to be used to develop a hydrologic model to simulate gap flow. The test had to be curtailed prematurely in September 1994 due to excessive water levels in WCA 3B from unusually heavy rainfall. The L-67A gap was closed and had not been opened since. As part of the emergency actions, this gap has now been re-opened as of January 14th with the objective of using it to move water into WCA 3B for storage. The previous criteria for closing the L-67A gap was a stage of 8.5 feet at the Site 71 gage (G-71) in WCA 3B. For the emergency action, this closing criteria has been increased to 9.0 feet until May 15th, when it will revert back to 8.5 feet. After the emergency period, the intent is to continue with the original Pilot Gap Test as described in the 1994 EA for the project. If at any time the closing criterion is reached and the gap has to be closed, a series of gated culverts would be installed in the fill material to allow flexibility to discharge water into WCA 3B in the future. This alteration to the original test would be coordinated with Florida Department of Environmental Protection (DEP).

2.07 Proposed Action to Reduce Discharges from the S-12s. A temporary emergency deviation in the WCA 3A water regulation schedule would be implemented to allow water levels to rise higher before the S-12s are used to attempt to curtail the rise. The present gate openings for S-12C and D would be maintained until that time. The higher limit for the schedule would continue until April 1st before transitioning back to the normal regulation schedule by June 1st. The existing authorized operation calls for all four S-12 structures to be opened fully when the water level rises to 10.75 feet at this time of year (see Plate 3). The FWS has declared that any opening of the S-12s greater than present would lead to failure of sparrow nesting and eventual extinction of the species. The inflexibility of that position precludes the Corps from taking action within its authority to protect habitat in the WCAs. However, at a point, because of the unacceptable risk of catastrophic failure of the structures and the associated potential loss of human life, the structures would have to be opened.

The best engineering judgment of the Corps is as follows.

When the three-station average stage in WCA 3A reaches 11.25 feet, all four S-12 structures would be opened fully (see Plate 3).

This level represents the maximum stage that can safely be allowed without water management intervention. The 11.25-foot trigger represents an engineering cap based on public safety, not an environmental cap (see Appendix C for the rationale). This does not represent an attempt to balance adverse impacts to the sparrow against adverse impacts to the natural resources in WCA 3A. It is considered that the sparrow has statutory protection under the Endangered Species Act, while there is no counterbalancing statutory protection for the other resources. It should be recognized that 11.0 feet is the elevation of the top of the S-12 gates. Water levels above this would cause spillover of the S-12s, effectively nullifying any intent to further curtail flows into the sparrow's western habitat.

2.08 Alternative Operation of the S-12s. An alternative course of action was discussed during an interagency conference call on January 21st that called for a phased opening of the S-12s as follows.

When the three-station average stage in WCA 3A reaches 10.9 feet, S-12C and D would be fully opened. If water levels rise to 11.0 feet thereafter, S-12A and B would then be fully opened (see Plate 4).

This alternative might have provided some amelioration of adverse high-water effects on the natural resources in WCA 3A, but it cannot be acted upon because of objections from the FWS that any further releases from the S-12s would jeopardize the sparrow.

2.09 Actions to Address Increased Seepage from WCA 3B. Except for a small culvert structure (G-69) discharging into the Tamiami Canal, there is no existing outlet for water stored in WCA 3B. Evapotranspiration and seepage under and through the impounding levees is the only escape. Seepage is quite prominent and will have an effect on the stage in the Tamiami Canal and, particularly, the L-30 Canal on the eastern side. The following operations of the South Dade Conveyance System are being considered to facilitate conveyance of seepage water to tide (see Appendix B for more details).

- a. Temporarily change the target stage in L-31W to 4.2 feet.
- b. Operate S-151, G-69, and the L-67A gap closure using Site 71 criteria.
- c. Move WCA 3B seepage from L-30 Canal via L-31N and C-111.

2.10 Actions to Divert S-12 Discharges Away from the Western Habitat. Culverts in the L-67 Extension borrow canal have been opened to increase flows south into the Park. Park personnel have sandbag-closed the culverts under the 7-mile north-south Shark Valley Tram Road, which lies just east of S-12B. It is anticipated that this will prevent the current limited discharges from S-12C and S-12D from spreading west towards the western habitat. The Corps has proposed that an evaluation be made to determine whether greater discharges could be made through S-12D and/or S-12C, since the sandbagging is complete. The test would be performed by opening S-12C and D further while monitoring water levels at gages located south of S-12C and D and gage NP205, the indicator gage for the sparrow western habitat. If NP205 is unaffected, S-12C & D can be used more effectively to increase discharges out of WCA 3A. The Park has objected to this test.

2.11 Actions Considered but not Adopted. The following actions have been suggested to address the emergency, but have not been adopted for the reasons described.

a. It was suggested that, if the L-67 gap-closing criteria is reached, the L-67C gap could be closed instead of the L-67A gap, allowing some additional releases from WCA 3A into the "pocket" between the two levees. This was not adopted because a geotechnical evaluation of the L-67C levee indicated that its structural integrity might be compromised if water levels were allowed to rise higher than under the proposed criteria. The height of the levee and the composition of the fill material was designed for seepage control, not flood control.

b. The 9.0-foot closing criteria for L-67A was not extended past May 15th because after that date there is an unacceptable risk of the occurrence of storms with high rainfall that could cause flood control problems within WCA 3B.

c. The FWS's requests for use of S-333 and breaching of the L-67 Extension levee were not adopted because they were likely to cause flooding of private property, thereby introducing constitutional and statutory issues that would need to be resolved at the Washington level. The actions would also need to be subjected to more detailed hydrologic modeling than could be accomplished in the timeframe for this EA. This modeling is being undertaken, and the requested actions will be addressed as soon as possible in another NEPA document.

d. Alternative S-12 operation to provide some protection to the natural resources in the WCAs (see paragraph 2.08).

2.12 Termination of the Emergency Actions. The goal of these actions is to allow breeding by the Cape Sable seaside sparrow this spring in its habitat west of Shark River Slough. The sparrow can breed anytime there is sufficient suitable vegetative

habitat with no standing water between March 1st and the start of the rainy season in June. According to Dr. Stuart Pimm of the University of Tennessee, the leading sparrow researcher, the target date to be considered for the latest probable initiation of breeding is April 15th. The Park hydrologists have been given the lead to develop the hydrologic criteria for determining in advance when the "hydrologic point of no return" has been reached, i.e., the date in conjunction with water levels at which there is no reasonable probability that the sparrow habitat would be dry by April 15th. This would be the earliest termination date for the emergency actions. The latest date would be June 15th, if nesting had been ongoing.

3.00 ENVIRONMENTAL EFFECTS

3.01 General. A description of effects of the considered actions on natural resources were solicited from the Park, FWS, Florida Game and Fresh Water Fish Commission (GFC), and Florida Department of Environmental Protection (DEP). Responses were received from all agencies except the Park. The response letters are included in Appendix A. Hydrologic effects are predicted from simulations by the South Florida Water Management Model using a fixed 1000 cfs discharge from S-12D, L-67A and C gapped, the SDCS operated as detailed in Appendix B, the S-12s operated as shown on Plate 4, and S-333 with the Test 7 approved constraints. The model output is shown graphically as hydrographs comparing the emergency operations with normal system operations (Appendix C). It should be noted that the proposed operations of the S-12s (Plate 3) were not modeled, so the model results might under-represent some of the impacts.

3.02 Hydrologic Effects in the WCAs. All the WCAs would be affected by water levels that will be higher and of longer duration than if the temporary deviations from the approved water regulation schedules were not implemented. The magnitude of these hydrologic effects would be dependent on the regional rainfall patterns over the next several months, and as such, is not quantifiable. However, the 90-day National Weather Service climate outlook predicts a 63% chance of above normal precipitation for Florida for January through March.

3.03 Model-Predicted Hydrologic Effects within WCA 3. In WCA 3A, interior stages and duration are relieved by the emergency gap through the L-67 A+C levee, which show flows greater than 2000 cfs based on a weir length of 1000 ft and crest elevation 7.0 feet. Likewise, in WCA 3B, interior stages are higher because of the gap. Overall, above ground durations are unchanged, except for ponding in the lower southeast corner.

3.04 Model-Predicted Hydrologic Effects Near Western Habitat of the Sparrow. The area southwest of WCA 3A, represented by gage NP-205 shows a decrease in the duration of ponding of water of 17.0%, and a decrease in above-ground stages of 4.0 inches.

3.05 Model-Predicted Hydrologic Effects Near Sparrow Sub-Population E. The area south of L-67 Extension, represented by a cell located south west of NP-206, shows a 12% shorter duration of above ground ponding and a decrease in average stage of 4.0 inches.

3.06 Model-Predicted Hydrologic Effects East of WCA 3B. Structure S-335, was set to open when the headwater was greater than or equal to 7.0 feet to move seepage water from WCA 3B via the L-30 and L-31N canals. High wet season stages averaged about 7.5 feet, with peaks going as high as 8.0 feet, and early dry season stages (through March) between 7.0 and 7.5 feet.

3.07 Model-Predicted Hydrologic Effects at Structures in the SDCS. S-331 discharges increased 13.0% of the time with an average discharge increase of up to 100 cfs.

3.08 Model-Predicted Hydrologic Effects in Bird Drive Basin. Areas east of L-31N, represented by the cell at Bird Drive (G-3439), show very little increase in stage or duration. The area represented by Krome (G-978), shows increased duration of flooding, and wet season stages increased by 7.5 feet.

3.09 Model-Predicted Hydrologic Effects in 8.5 SMA. A cell in the 8.5 SMA shows an increase of up to 4% in the duration of flooding. For example, at Angels well, above ground stages may increase by up to 1.5 inches.

3.10 Effects of High Water on Tree Islands in the WCAs. The GFC expressed concerns about extended flooding of tree islands in the WCAs. Tree islands occupy less than 1.5% of the Everglades landscape (in WCA 2A and 3A) in areal extent, but are an invaluable component of the regional ecology of the Everglades. Many tree islands and willow strands have been severely damaged by abnormally high water levels beginning in 1993 and extending up until the present time. The extreme water depths and durations experienced during the 1994-1995 high water period were particularly damaging to the full spectrum of tree islands from the low elevation willow strands to the high elevation tropical hammocks. Both extensive willow strands and tropical hammocks are rare and valuable plant communities within the WCAs. Within WCA 3A, higher water levels would continue to damage and prevent regeneration of tree islands already weakened by past submergence and soil saturation. The GFC is concerned that the maintenance of elevated water levels throughout the dry season (November-May) would be especially detrimental to tree island vegetation, as this is the time of year when most tree species should be adding new growth at a vigorous rate. The GFC is particularly concerned with the proposal to raise water levels to 9.0 feet in WCA 3B during the dry season, since some of the islands begin to be inundated when water levels reach 8.4 feet. The maintenance of higher water levels would extend flood damage to an area that is relatively undamaged. Such flooding would tend to be of long duration because there is no operational capability to effectively lower water levels when the sparrow emergency is over.

3.11 Effects of High Water on Wildlife in the WCAs. The GFC expressed concern that continued flood damage to large willow strands that have served as the primary nesting sites for wading birds in the WCAs since the 1970s would further reduce wading bird nesting opportunities and populations in south Florida. Furthermore, higher water levels result in poor feeding conditions, poor nesting effort, and poor nesting success for

short-legged and tactile-feeding wading birds. Wood storks, snowy egrets, and white ibis would probably suffer the greatest decline in reproductive effort and success. During successful nesting years in the WCAs, WCA 2A, west-central WCA 3A, and WCA 3B have all served as important feeding areas for wading birds at some time during the nesting cycle. The anticipated increased water depths and duration of flooding would seriously affect upland-dependent wildlife, including various mammals, reptiles, and amphibians, some of which are only beginning to recover from the 1994-1995 flood event.

3.12 Effects of High Water on Endangered Species in the WCAs.

The FWS believes that the anticipated higher water levels in the WCAs may adversely affect the endangered wood stork by delaying or precluding the initiation of nesting this spring, and by diminishing the habitat available for nesting. During years with heavy rains over the past decade, they believe that high water levels delivered to the southern Everglades have significantly modified and degraded wood stork habitat and significantly diminished their ability to successfully breed in the region. The FWS also believes that maintaining high water levels during the dry season in WCA 3A may adversely modify designated Critical Habitat for the endangered snail kite and reduce the amount of habitat available. The FWS believes that maintaining high water levels during the dry season in the WCAs would result in reduced foraging opportunities for wading birds, including wood storks. They state that they will conduct an after-the-fact Endangered Species Act consultation to evaluate impacts on the wood stork, snail kite, and snail kite Critical Habitat.

3.13 Effects of High Water on the Miccosukee Indian Tribe.

The Miccosukee Tribe and its members rely upon the Everglades in its natural state to support their religious, subsistence, and commercial activities. The Tribe's religious activities traditionally include the planting and harvesting of corn on tree islands in the Everglades. Subsistence activities include gathering of materials, hunting, and fishing in the Everglades. Commercial activities include frogging, conducting airboat and other guided tours, and providing recreational and tourism facilities within the Everglades. The Tribe states that "The alteration of the natural state of the Everglades and its permanent destruction as a unique natural ecosystem, including unnaturally high water levels or imbalances in natural flora and fauna, seriously threatens the Tribe's entire way of life in the Everglades and infringes upon the Tribe's ability to practice its religious customs and maintain its traditional bases of subsistence, commercial activities, and natural resources (including its land, the flora and fauna living thereon, and the water flowing thereon)." "The decision to keep the S-12 structures closed and not follow the approved regulation schedule for WCA 3A denies the Miccosukee Tribe their right to exercise their religious freedoms." The Miccosukee Tiger Tail Camp, located on flat ground between the L-29 levee and canal, is

presently being raised in elevation by the Corps as part of the authorized Modified Water Deliveries to ENP project. Higher water levels in WCA 3B would increase seepage under L-29, but it is not expected to affect the Tiger Tail Camp or the ongoing construction activities to raise it.

3.14 Effects of Fresh Water Discharge to Estuaries. The coastal canals are being used up to their maximum capacity to discharge water to the estuaries. The FWS believes that re-routing regulatory flows to the estuarine environment will adversely impact these productive ecosystems. DEP states the following:

a. Additional discharges through C-51 to Lake Worth will probably not cause any significant additional environmental damage because large scale discharges are fairly routine events.

b. Impacts from discharges to the ICW from the Hillsboro and North New River canals would be ameliorated as a result of tidal flushing from nearby inlets to the ocean.

c. Discharges from the Miami Canal into Biscayne Bay could increase the movement of toxic river sediments into the Bay.

d. If discharges through the South Dade Conveyance System require opening of S-197, impacts could occur in Barnes Sound as a result of lowered salinity. High volumes and long duration of discharges through S-197 could cause severe damage to the benthic invertebrate community and sea grasses.

3.15 Water Quality Effects. The closest structure to the L-67A gap that would deliver water with a quality of potential concern is the S-9 structure, which discharges water into the L-67A canal 17 miles upstream from the gap. Recent water quality data at S-9 indicates a flow-weighted average for the nutrient phosphorous of 18 ppb for the period 12/23/96 through 10/21/97. As a result of dilution from adjacent low-phosphorous marshwater, the phosphorous decreases to a flow-weighted average of about 10 ppb at the S-12s. Therefore, the value at the L-67A gap would likely lie between 10 and 18 ppb. The high rainfall this winter and the high water levels in WCA 3A would tend to put the flow-weighted average at the gap closer to 10 than 18 ppb. The Corps is preparing to reinitiate water quality monitoring at the gap to better define the situation.

4.00 AREAS OF CONTROVERSY

4.01 Park and FWS Position on Operation of the S-12s. During the December 22nd conference call, Park Superintendent Ring stated, with FWS concurrence, that he would not agree to any further opening of the S-12s at this time because of their imminent adverse effect on potential sparrow breeding in 1998. The FWS believes that operation of the S-12s has significantly modified and degraded the habitat of the sparrow and has significantly diminished their ability to successfully breed in the western habitat. Further releases of water through the S-12s would contribute to this degradation of the sparrow's habitat and may foreclose the formulation or implementation of reasonable and prudent alternatives for the reconsultation the FWS has requested on the Modified Water Deliveries to ENP project and the Experimental Program.

4.02 FWS Position on Higher Water Levels in the WCAs. In their January 15, 1998 letter (see Appendix A), FWS states "Because of the immediate adverse effects on endangered wood storks, snail kites, and other Federal trust resources, [the FWS does] not endorse any water management actions that artificially increase water levels in the WCAs."

4.03 FWS Position on Restoration of Flows into NESRS. The FWS has maintained in numerous letters that operating S-333 and breaching the L-67 Extension, which would redistribute water presently restricted to the western portion of SRS, are necessary to reduce the likelihood of jeopardy to the sparrow, while reducing harm to other parts of the natural system. The FWS also stated in their November 18, 1997 letter to the Corps that normal operations of the S-12s, as well as other structures, have significantly modified and degraded occupied sparrow habitat, and disrupted the normal breeding, foraging, and sheltering behavior of at least four of the six sparrow subpopulations. The alternative water management actions proposed by the FWS in their January 15, 1998 letter (Appendix A) is to divert water into NESRS (which would flow water over private property): "[The FWS] believe components of these projects could be implemented immediately, such as moving flows through the S-333 and degrading portions of the L-67 Extension levee."

4.04 Consequences of FWS Position on Flows into NESRS. The FWS position in their January 15th letter, on reasonable actions that could be taken immediately (i.e., diverting flows into NESRS) is in conflict with the position they expressed in their November 18th letter in which they acknowledged that they would defer to the Corps' interpretation of Corps authorities. The Corps continues to maintain that actions that would move water into NESRS, thereby flooding private property, are not within the authority of the Corps to implement at this time. This leaves no water management options that can be agreed upon by the Federal agencies. The FWS states that the solution would be the

immediate acquisition [by DOI] of the Park expansion lands in NESRS and the condemnation or acquisition of private properties in the 8.5 SMA.

4.05 FWS Position on the Duration of the Emergency. In a conference call on January 20th, the FWS stated that, whether or not the sparrow is able to breed this season in the western habitat, efforts should be made to create water conditions in the habitat that would sustain the muhly grass vegetation. Extended hydroperiods cause the predominance of vegetation to shift from muhly grass to sawgrass: sparrows will not breed in sawgrass. Maintenance of muhly grass requires a two to three month dry-out each year. Studies in Taylor Slough have revealed that conversion to sawgrass occurs quickly (two to three years) under long hydroperiods, but it is not known how long it would take to revert back to muhly grass if shorter hydroperiods were reestablished. There has already been some conversion to sawgrass in the western habitat over the past several years. A long hydroperiod this year would cause further degradation that could lead to a failure of the sparrow to breed there in the future.

4.06 Consequences of Extending the Emergency. Including habitat considerations in the emergency actions could potentially extend the emergency actions by three months. If dryout had not occurred by April 15th, the sparrow breeding season would be over, but depending on rainfall, some dryout conducive to muhly grass could occur right up to the beginning of summer rains that signal the end of the dry season. This could be as late as July 1st, but is difficult to predict in advance. That would be three additional months of holding higher water in the WCAs, and the concomitant adverse effects on the natural resources therein.

The GFC (see letter of January 23, 1998 in Appendix A) anticipates that this action would have severe consequences in the WCAs. They state that, even fully opened, the capacity of the S-12s to lower water in WCA 3A is limited. Observations during the 1994-1995 high water events have shown that if high water levels are maintained through the dry season, then water levels in WCA 3A remain excessively high during the following wet season, thereby reducing the overall storage capacity of the WCA.

Not only would this situation exacerbate recent damage to the remaining native upland communities in WCA 3A, but it would also set the stage for a reenactment of the current emergency next year.

**PRELIMINARY
FINDING OF SIGNIFICANT IMPACT**

**Emergency Deviation from Test 7 of the
Experimental Program of Water Deliveries to
Everglades National Park to
Protect the Cape Sable Seaside Sparrow**

I have reviewed the information analyzed in the Environmental Assessment of the proposed action, reflecting pertinent information obtained from other agencies having jurisdiction by law and/or special expertise. I conclude that there would be significant impacts resulting from the proposed action. Summary reasons for this conclusion are that the proposed action would likely:

1. Adversely affect natural resources in the Water Conservation Areas, including tree islands and wading bird nesting and foraging habitat.
2. Adversely affect the ability of the Miccosukee Indian Tribe to practice its religious customs and maintain its traditional activities.

Based on the information summarized, I find that the proposed action would have a significant effect on the quality of the human environment under the meaning of Section 102(2)(C) of the National Environmental Policy Act, and, therefore, requires preparation of an Environmental Impact Statement.

Date

JOE R. MILLER
Colonel, U.S. Army

District Engineer